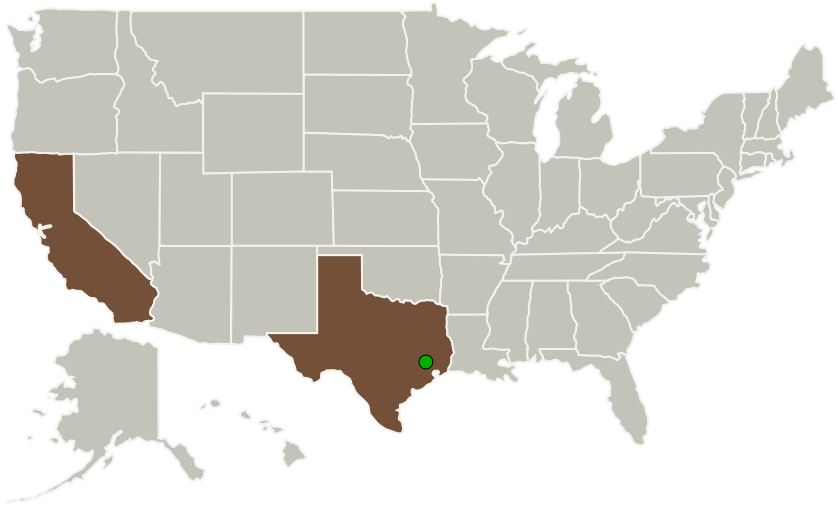
Sensor to Measure Space Suit Interactions with the Human Body, Phase I

Completed Technology Project (2017 - 2017)

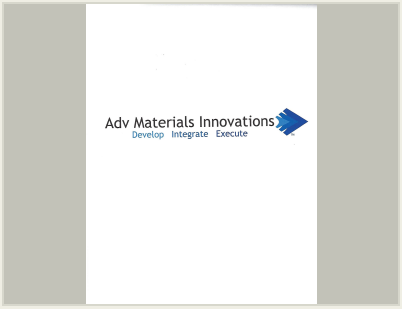
Project Introduction

The team has identified and is proposing a single sensor technology that targets the above requirements including readout capability. Our novel technology will utilize a proprietary 3D optical fabrication process and fabric combination for small form factors to achieve the required results. The sensor fabric will be developed so that it is mechanically equivalent with human skin to eliminate interfacial decoupling and allow accurate pressure readings. Multiple sensors will be integrated into a prototype and the flexible packaging will be where multiple sensors are integrated such that that they are compatible with attachment to human skin or the spacesuit comfort garments. By using a nanocomposite sensor approach, the team will maximize spatial resolution and accuracy at the same time minimize weight. A replaceable fabric approach will also be developed to address failure rates with component spares.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Adv Materials Innovations	Lead Organization	Industry	San Diego, California
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas



Sensor to Measure Space Suit Interactions with the Human Body, Phase I Briefing Chart Image

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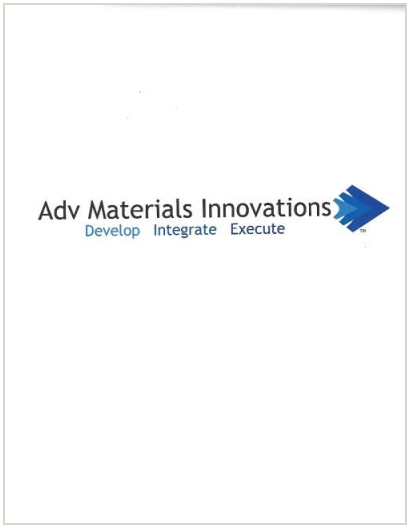
Primary U.S. Work Locations	
California	Texas

Images



Briefing Chart Image
Sensor to Measure Space Suit Interactions with the Human Body, Phase I Briefing Chart Image *(https://techport.nasa.gov/image/134658)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Adv Materials Innovations

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

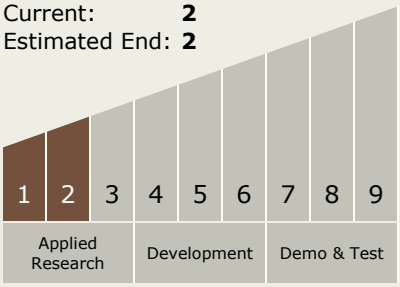
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Carl Edwards

Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **2**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.1 Pressure Garment

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System